

**REMARKS**

**I. Preliminary Matters**

Claims 1-16 are all the claims pending in the application. Claims 1-16 have been examined.

Applicants thank the Examiner for indicating that the drawings filed with the application on July 18, 2003 have been accepted. Applicants also thank the Examiner for acknowledging the Applicants' claims of foreign priority under 35 U.S.C. § 119. Finally, Applicants thank the Examiner for issuing the Supplemental Office Action of November 24, 2006, indicating the basis for the objections to claims 2-6 and 1-14.

**II. Claim Rejections - 35 U.S.C. § 112**

The Examiner has indicated that claim 15 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, in regards to claim 15, the Examiner asserts that the claims are indefinite because claim 15 is a method claim which depends on independent apparatus claim 1.

After reviewing the claims, Applicants assert that claim 15 erroneously depends from claim 1 as a result of a scrivener's error. As a result, claim 15 has been amended to depend from independent method claim 9. The amendment to claim 15 was made for reasons of precision of language and consistency, and does not narrow the literal scope of the claims and thus does not implicate an estoppel in the application of the doctrine of equivalents. The amendment to claim 15 was not made for reasons of patentability.

As a result of the clarifying amendment, the rejection of claim 15 is now believed to be moot, and Applicants respectfully request that the objection be withdrawn.

**III. Claim Rejections - 35 U.S.C. § 103**

The Examiner has rejected claims 1, 7-9, 15 and 16 under 35 U.S.C. §103(a) as allegedly being unpatentable over Applicant's admitted prior art ("APA") in view of Fujii (U.S. 2002/0181557) and in further view of Abe et al. (U.S. Pat. No. 6,990,160). This rejection is traversed, as none of the references, either alone, or in combination, teach or suggest at least "having a second estimating unit for estimating a second multi-path by applying a second threshold value to the correlation function of the third received signal in which the correlation noise has been removed," as recited in claim 1.

The Examiner concedes that the above claimed element is not disclosed in the APA or Fujii, but however, contends that this deficiency is cured by Abe. Applicants respectfully disagree.

In one embodiment, the Examiner alleges that Abe discloses a communication apparatus comprising a rough timing estimator and a fine timing estimator. (Col. 13, ll. 27-34, Col. 14, 56-65, the 6<sup>th</sup> embodiment).

In a completely different embodiment, Abe discloses having a canceller that cancels intersymbol interference from the receiving signal; an operator that determines correlation between signals having intersymbol interference removed and corresponding taps respectively; and a known signal sequence; and an estimator that detects a tap coefficient that yields a maximum operation result in the operator. (See claim 12, See also FIG. 12, Col. 17-20, the 7<sup>th</sup>

embodiment). The 7<sup>th</sup> embodiment only **contains a single time estimator** and thus does not perform both a rough and a high accuracy timing estimate. (See claim 12 and FIG 12).

To the extent that the Examiner is combining the 6<sup>th</sup> embodiment with the 7<sup>th</sup> embodiment, described in cols. 17-20, these are different embodiments which may not be combined absent a specific teaching to do so. See *In re Kramer*, 18 USPQ2d 1415, 1416 (Fed. Cir. 1991); *Ex parte Beuther*, 71 USPQ2d 1313, 1316 (BPAI 2003). Thus, Abe cannot disclose “having a second estimating unit for estimating a second multi-path by applying a second threshold value to the correlation function of the third received signal in which the correlation noise has been removed,” as recited in claim 1.

Further, the Examiner concedes that Abe is silent in disclosing that the estimation has been performed by applying a second threshold to the correlation function. However, the Examiner contends that “it is well known from the primary reference that the estimation has been performed using this method.” Applicants respectfully disagree.

It is well known that, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. (*In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)). In this case, Abe teaches performing a rough measurement using the sampling rate in reception. Next, the high accuracy measurement in Abe is performed **based on a ratio of correlation values with respect to known signals**.

Conversely, even the APA discloses performing **the first estimate** based on a ratio of correlation values with respect to known signals. The second, high accuracy circuit disclosed in

Abe performs a function similar to that of the first timing estimator circuit in the APA. Thus, combining the second circuit in Abe with the first circuit in the APA would simply add a second redundant circuit to the APA and would not increase the efficiency of estimation. For at least the above reason, Applicants respectfully assert that one of ordinary skill in the art would not have been motivated to combine the references in the manner suggested by the Examiner.

With regard to dependent claims 7-8, those claims depend from independent claim 1, and thus Applicants respectfully assert that claims 7-8 are patentable at least by virtue of their dependency on claim 1.

With regard to independent method claim 9, Applicants respectfully assert that the rejection is traversed for reasons analogous to those recited with regard to claim 1 above. Further, claims 15 and 16 depend from independent claim 9 and are patentable at least by virtue of their dependency on claim 9.

#### **IV. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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